

What is claimed is:

1. An adjusting device comprising:

a base unit;

a load take-up unit;

5 a transmission coupling said units to each other so as to permit a movement of said load take-up unit relative to said base unit in two different directions; and,

said transmission including:

a coupling plate;

10 two force-transmitting units operatively connected to said coupling plate; and,

means for operatively connecting said load take-up unit to said two force-transmitting units so as to cause at least one of said force-transmitting units to roll off on said coupling plate in response to a movement of said load take-up unit relative to
15 said base unit.

2. The adjusting device of claim 1, wherein said force-transmitting units are configured as track units or belt units which roll off on said coupling plate.

3. The adjusting device of claim 1, wherein said force-transmitting units each include two wheel elements journaled on rotational axes.

4. The adjusting device of claim 3, wherein the rotational axes of said wheel elements are mutually orthogonal.

5. The adjusting device of claim 3, wherein said wheel elements

are configured as respective gear wheels.

6. The adjusting device of claim 1, wherein said coupling plate is a first coupling plate and said adjusting device further comprising a second coupling plate operatively connected to said force-transmitting units.

7. The adjusting device of claim 1, wherein said coupling plate is configured as a toothed plate.

8. The adjusting device of claim 1, wherein said transmission includes a drive assigned to said force-transmitting units.

9. The adjusting device of claim 8, wherein said drive is configured as an electric drive.

10. The adjusting device of claim 1, wherein said coupling plate has a cutout formed therein for passing cables therethrough.

11. The adjusting device of claim 1, wherein said coupling plate is fixedly attached to said base unit.

12. The adjusting device of claim 1, wherein said force-transmitting units are journalled in a support unit fixedly connected to said base unit.

13. The adjusting device of claim 6, wherein one of said coupling plates is fixedly connected to said load take-up unit.

14. An adjusting device comprising:

a base unit;
a load take-up unit;
a transmission coupling said units to each other so as to
5 permit a movement of said load take-up unit relative to said base
unit in two different directions; and,
said transmission including:
a first holding part;
a second holding part in spaced relationship to said first
10 holding part;
a first four-joint chain;
first and second rotational joints for journalling said
first four-joint chain on said first holding part;
a third rotational joint for operatively connecting said
15 first four-joint chain to said base unit;
a second four-joint chain;
fourth and fifth rotational joints for journalling said
second four-joint chain on said second holding part;
a sixth rotational joint for operatively connecting said
20 second four-joint chain to said load take-up unit; and,
said first four-joint chain being fixedly connected to said
second four-joint chain.

15. The adjusting device of claim 14, further comprising a drive
for moving one of said four-joint chains.

16. The adjusting device of claim 15, wherein said drive
comprises a spindle and an electric motor for driving said
spindle.

17. The adjusting device of claim 16, further comprising a

holding arm mounted on said base unit.

18. The adjusting device of claim 17, further comprising a connecting arm mounted on said load take-up unit.

19. The adjusting device of claim 14, wherein said first holding part is configured as a cover part.

20. The adjusting device of claim 19, wherein said second holding part is configured as a base part.

21. The adjusting device of claim 20, further comprising a slide bearing for guiding the base unit on said cover part.

22. The adjusting device of claim 21, wherein said cover part has a cutout for said holding arm.

23. The adjusting device of claim 22, further comprising a slide bearing for guiding the load take-up unit on said base part.

24. The adjusting device of claim 23, wherein said base part has a cutout for said connecting arm.

25. An adjusting device comprising:

a base unit;

a load take-up unit;

5 a transmission coupling said units to each other so as to permit a movement of said load take-up unit relative to said base unit in two different directions; and,
said transmission including:

a lever element;
a holding part;
10 a joint for journalling said lever element in said holding part; and,
said lever element being operatively connected to said base unit and to said load take-up unit.

26. The adjusting device of claim 25, wherein said joint is configured as a ball joint.

27. The adjusting device of claim 26, further comprising a drive for moving said lever element.

28. The adjusting device of claim 27, wherein said drive comprises two spindle drives and two electric motors for driving corresponding ones of said spindle drives.

29. The adjusting device of claim 28, wherein said ball joint is a first ball joint and said adjusting device further comprises a second ball joint for defining the operative connection of said lever element to said base unit.

30. The adjusting device of claim 29 further comprising a third ball joint for defining the operative connection of said lever element to said load take-up unit.

31. The adjusting device of claim 30 further comprising a holding arm mounted on said base unit.

32. The adjusting device of claim 31 further comprising a

connecting arm mounted on said load take-up unit.

33. The adjusting device of claim 32 further comprising a housing for said transmission and said housing including a cover part; and, a slide bearing for guiding said base unit on said cover part.

34. The adjusting device of claim 33 wherein said cover part has a cutout to facilitate movement of said holding arm.

35. The adjusting device of claim 34, wherein said housing includes a base part and a further slide bearing for guiding said load take-up unit on said base part.

36. The adjusting device of claim 35 wherein said base part has a cutout to facilitate movement of said connecting arm.

37. An adjusting device comprising:

a base unit;

a load take-up unit;

a transmission coupling said units to each other so as to
5 permit a movement of said load take-up unit relative to said base unit in two different directions; and,

said transmission including:

belt means for coupling a movement of said base unit to a movement of said load take-up unit.

38. The adjusting device of claim 37, wherein said belt means includes: a first belt element pair and a second belt element pair for coupling a movement of said base unit to a movement of

said load take-up unit.

39. The adjusting device of claim 38, wherein said first belt element pair and said second belt element pair are guided orthogonally to each other.

40. The adjusting device of claim 39 further comprising a first holding unit and a slide bearing for guiding said base unit on said first holding part.

41. The adjusting device of claim 40, wherein said first holding unit is configured as a cover part of a housing.

42. The adjusting device of claim 41 further comprising a second holding unit and a second slide bearing guiding said load take-up unit on said second holding unit.

43. The adjusting device of claim 42 wherein said second holding unit is configured as a base part of said housing.

44. The adjusting device of claim 43 further comprising a drive for moving said load take-up unit relative to said base unit.

45. The adjusting device of claim 44, wherein said drive comprises a first electric motor having a first spindle drive and a second electric motor having a second spindle drive.

46. The adjusting device of claim 45 wherein said first spindle drive and said second spindle drive are supported on said first holding unit.

47. The adjusting device of claim 46, wherein said drive further comprises a first nut threadably engaged on said first spindle and a first guide element hinged to said first nut and to said base unit.

48. The adjusting device of claim 47, wherein said drive further comprises a second nut threadably guided on said first spindle drive and a second guide element hinge connected to said second nut and to said base unit.

49. The adjusting device of claim 48, wherein said drive further comprises a third nut guided on said second spindle drive and a third guide arm hinge connected to said third nut and to said base unit.

50. The adjusting device of claim 49, wherein said first guide element and said third guide element are parallel to each other.

51. The adjusting device of claim 50, said transmission including a first slide bushing and a first guide shaft for one of said belt elements; and, a first one of the belt elements being guided by said first guide bushing on said first guide shaft and said first guide shaft being fixedly connected to said base unit.

52. The adjusting device of claim 51, said transmission including a second slide bushing and a second guide shaft for a second one of said belt elements; and, the second belt element being guided by said second guide bushing on said second guide shaft and said second guide shaft being fixedly connected to said

load take-up unit.

53. The adjusting device of claim 52, said transmission including a first direction-changing roller; and, said first belt element being guided over said first direction-changing roller.

54. The adjusting device of claim 53, wherein said first direction-changing roller is accommodated in a first bearing fixed relative to said first holding unit.

55. The adjusting device of claim 54, said transmission including a second direction-changing roller accommodated in a second bearing fixed relative to said second holding unit.

56. The adjusting device of claim 55, further comprising a holding arm configured on said base unit.

57. The adjusting device of claim 56, said first holding unit having a cutout for said holding arm.

58. The adjusting device of claim 57, further comprising a connecting arm configured on said load take-up unit.

59. The adjusting device of claim 58, wherein said second holding unit has a cutout for said connecting arm.

60. An adjusting device comprising:
a base unit;
a load take-up unit;
a transmission coupling said units to each other so as to

5 permit a movement of said load take-up unit relative to said base unit in two different directions; and,

said transmission including:

a linkage parallelogram including a first linkage element, a second linkage element, a third linkage element and a fourth
10 linkage element;

a first joint for connecting said linkage parallelogram to said base unit and a second joint for connecting said linkage parallelogram to said load take-up unit.

61. The adjusting device of claim 60, wherein at least one of said first and second joints is configured as a ball joint.

62. The adjusting device of claim 61, further comprising a drive for moving said linkage parallelogram.

63. The adjusting device of claim 62, wherein said drive includes three spindle drives having respective electric motors.

64. The adjusting device of claim 63, wherein a holding arm is mounted on said base unit.

65. The adjusting device of claim 64, wherein a connecting arm is mounted on said load take-up unit.

66. The adjusting device of claim 65, further comprising a housing having a cover part; and, a slide bearing for guiding said base unit on said cover part.

67. The adjusting device of claim 66, wherein said cover part

has a cutout for facilitating the movement of said connecting arm.

68. The adjusting device of claim 67, wherein said housing includes a base part; and, said adjusting device further comprises a slide bearing for guiding said load take-up unit on said base part.

69. The adjusting device of claim 68, wherein said base part has a cutout for facilitating the movement of said holding arm.

70. An adjusting device comprising:

a base unit;

a load take-up unit;

a transmission coupling said units to each other so as to permit a movement of said load take-up unit relative to said base unit in two different directions; and,

said transmission including:

first and second rotational members for coupling said base unit to said load take-up unit;

said first rotational member being rotationally journalled on said base unit so as to be rotatable about a first axis;

said second rotational member being rotationally journalled on said first rotational member so as to be rotatable about a second rotational axis;

said load take-up unit being rotationally journalled on said second rotational member so as to be rotatable about a third rotational axis;

said first and second rotational axes being offset relative to each other and said second and third rotational axes being

20 offset relative to each other; and,
 said first and second rotational members being configured as
 respective inclined cylinders.

71. The adjusting device of claim 70, further comprising a drive
assigned to at least one of said rotational members; and, said
drive including an electric motor.

72. The adjusting device of claim 71, wherein at least one of
said rotational members has a honeycomb-shaped profile structure.

73. An adjusting device comprising:

 a base unit;

 a load take-up unit;

5 a transmission coupling said units to each other so as to
 permit a movement of said load take-up unit relative to said base
 unit in two different directions; and,

 said transmission including:

 a first linkage arm and a second linkage arm;

10 means for connecting said first and second linkage arms to
 said load take-up unit so as to be rotationally movable;

 a displacing unit;

 a rotational joint for hinge connecting at least one of said
 linkage arms to said displacing unit;

15 said one linkage arm having a pivot or hinge connecting
 point on said base unit; and,

 said displacing unit moving said pivot or hinge connecting
 point to move said load take-up unit relative to said base unit.

74. The adjusting device of claim 73, wherein said displacing

unit is configured as a linear guide.

75. The displacing unit of claim 74, wherein the linear guide includes a drive spindle.

76. The adjusting device of claim 75, further comprising an electric motor for driving said displacing unit.

77. The adjusting device of claim 76, further comprising a coupling mechanism assigned to at least one of said linkage arms and being adapted to transfer a rotational movement of said rotational joint on the displacing unit to said load take-up unit.

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78. The adjusting device of claim 77, wherein said coupling mechanism includes a toothed belt.

79. The adjusting device of claim 76, further comprising a housing surrounding said transmission and fixedly connected to said base unit.

80. The adjusting device of claim 79, wherein the load take-up unit is supported in said housing.

81. The adjusting device of claim 80, wherein said displacing unit is fixedly connected to said housing.

82. An adjusting device comprising:
a base unit;
a load take-up unit;

a transmission coupling said units to each other so as to
5 permit a movement of said load take-up unit relative to said base
unit in two different directions; and,

said transmission defining a first rotational axis and a
second rotational axis offset with respect to said first
rotational axis; and, means for moving said load take-up unit
10 relative to said base unit about said first rotational axis and
about said second rotational axis.

83. The adjusting device of claim 82, further comprising a first
crown gear defining said first rotational axis and said first
crown gear being securely connected to said base unit.

84. The adjusting device of claim 82, further comprising a worm
gear securely connected to said base unit and said worm gear
defining said first rotational axis.

85. The adjusting device of claim 83, further comprising a
second crown gear and said second crown gear including means for
holding said load take-up unit.

86. The adjusting device of claim 83, further comprising a
transmission intermediate member on which a first toothed wheel
is supported which meshes with said first crown gear.

87. The adjusting device of claim 85, further comprising a
transmission intermediate member on which a second toothed wheel
is supported which meshes with said second crown gear.

88. The adjusting device of claim 86, further comprising an

electric motor for driving said first toothed wheel.

89. The adjusting device of claim 84, further comprising a worm gear supported on said transmission intermediate member and said worm gear meshing with said worm gear wheel.

90. The adjusting device of claim 89, further comprising an electric motor for driving said worm gear.

91. The adjusting device of claim 87, further comprising an electric motor for driving said second toothed wheel.

92. The adjusting device of claim 91, wherein said load take-up unit is rotatably journalled on said means for holding said load take-up unit.

93. The adjusting device of claim 92, further comprising a gear assembly which transmits a rotation of the transmission intermediate member about said first rotational axis and said second rotational axis to said load take-up unit.

94. The adjusting device of claim 93, wherein said transmission includes a toothed belt.

95. The adjusting device of claim 93, wherein said transmission includes an electric motor having a control unit.

96. The adjusting device of claim 95, wherein said transmission includes a worm gear assembly.

97. The adjusting device of claim 96, wherein said first rotational axis and said second rotational axis are parallel to each other.

98. The adjusting device of claim 97, wherein said base unit is configured as a hollow body to facilitate a passthrough of cables; and, said base unit projects into said transmission with a funnel-shaped closure element.

99. The adjusting device of claim 98, wherein said load take-up unit is configured as a hollow body which projects into said transmission with a funnel-shaped end element for facilitating a passthrough of cables through said adjusting device.

100. A stand comprising:

a carrier arm for taking up a load;

an adjusting device connected to said carrier arm;

said adjusting device including:

5 a base unit;

a load take-up unit;

a transmission coupling said units to each other so as to permit a movement of said load take-up unit relative to said base unit in two different directions; and,

10 said transmission including:

a coupling plate;

two force-transmitting units operatively connected to said coupling plate; and,

15 means for operatively connecting said load take-up unit to said two force-transmitting units so as to cause at least one of said force-transmitting units to roll off on said coupling plate

in response to a movement of said load take-up unit relative to
said base unit.